**Delta Operations for Salmonids and Sturgeon (DOSS) Group**
**Conference call: 12/3/13 at 9:00 a.m.**

**Objective:** Provide advice to the Water Operations Management Team (WOMT) and National Marine Fisheries Service (NMFS) on measures to reduce adverse effects from Delta operations of the Central Valley Project and the State Water Project on salmonids and green sturgeon. DOSS will work with other technical teams. DOSS notes and advice can be found at: http://www.westcoast.fisheries.noaa.gov/central_valley/water_operations/doss.html.

**Attendees**

**DWR**: Mike Ford, Kevin Reece, Farida Islam, Aaron Miller, Andy Chu, Dan Yamanaka
**FWS**: Leigh Bartoo
**NMFS**: Barbara Rocco, Jeff Stuart
**Reclamation:** Russ Yaworsky, Josh Israel
**DFW:** Chris McKibbin, Colin Purdy, Bob Fujimura, Kristal Acierto
**EPA:** Erin Foresman
**SWRCB:** Scott Ligare
**USGS:** not present

**Agenda**

1. Agenda review and introductions
2. Fish monitoring
3. Current ops
4. Check in on WQ & DCC operations
5. Check on current and upcoming RPA actions
6. DOSS Advice

**Action Item:**

11/26: It was suggested that DOSS review the "key" for determining "smolt" vs. "juvenile" at Glenn–Colusa Irrigation District (GCID) and compare to the keys used at other monitoring locations. Ideally, life-stage classification would be standardized for all studies and monitoring locations. Byrne (NMFS) will ask about the key used at GCID and report to DOSS when she has more information (12/3, carried forward).

**Fish Monitoring:** The following table presents fish monitoring data. Unless otherwise noted, reported sizes are fork length. See also: http://www.water.ca.gov/swp/operationscontrol/calfed/calfedmonitoring.cfm.

| Location | Chipps Is. Midwater Trawl | Sacramento Trawls | Mossdale Kodiak Trawl | GCID | Knights Landing RST | Tisdale RST | Beach Seines |
|---|---|---|---|---|---|---|---|
| **Sample Date** | 11/25, 27, 29 | 11/25, 27, 29 | 11/25, 27, 29 | 11/26–30; 12/1–2 | 11/26, 27, 29, 30;12/1 | 11/27, 29, 30; 12/1–2 | 11/25–27, 29 |
| **Total Catch** | **12** | **0** | **0** | **187** | **0** | **0** | **0** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **FR** | | | | | | | |
| **WR** | | | | 174 | | | |
| **SR** | | | | 7 | | | |
| **LFR** | | | | 6 | | | |
| **Ad-Clipped Chinook** | | | | | | | |
| **DS** | 3 (62–63 mm) | | | | | | |
| **Splittail** | | | | | | | |
| **Longfin** | 9 (83–127 mm) | | | | | | |
| **SH (ad-clip)** | | | | | | | |
| **SH (wild)** | | | | | | | |
| **W. Temp. (avg. °F)** | 54.3 | 51.1 | 53.1 | 57.3 | 52.0 | 50.9 | 51.8 |
| **Flows (avg. cfs)** | | | | | 4,553 | 4,256 | |
| **Turbidity (avg. NTU)** | 22.0 | 8.5 | 10.2 | 1.80 | 3.7 | 6.8 | 10.3 |
| **WR/LFR Avg. CPUE** | | | | 1.15 | | | |
| **FR/SR Avg. CPUE** | | | | | | | |

CPUE = catch per unit of effort reported as the average fish/hour over reported sampling dates; ACT = acoustic tag; GCID = Glenn–Colusa Irrigation District; RST = rotary screw trap

[1]Flows at GCID are Bypass flows (in cfs) not Sacramento River flows.

[2]Note that FTU is used at Knight's Landing in place of NTU.

**Chipps Island:** A report from Speegle (FWS) noted that one non-clipped late-fall-run Chinook was caught on 12/2 at Chipps Island (151 mm). None of the 100,000 yearling-sized fall-run Chinook released from the Mokelumne River Hatchery on 11/1 have been seen in any of the Delta monitoring locations.

**Knights Landing:** Rotary screw trap (RST) sampling stopped for the Thanksgiving holiday at 16:00 on 11/27/13. Sampling resumed on 11/29/13 at 07:30.

**Red Bluff Diversion Dam (RBDD):** From 11/19 through 12/2, 146,416 winter run, 17,823 spring run, 2,579 fall run, 17,839 late-fall run, and 248 *O. mykiss* from brood year (BY) 2013 have passed RBDD. The totals for BY 2013 (which include estimates spanning the 16-day partial federal government shutdown during which there was no sampling at RBDD) are: 1,387,533 winter run, 74,057 spring run, 2,579 fall run, 104,191 late-fall run, and 164,295 *O. mykiss*. There has been a downward trend in the biweekly number of juvenile winter-run Chinook passing RBDD since the peak in early October; indicating that it is likely that the majority of juvenile winter run have passed through RBDD for the year.

**Fish Salvage:** Fujimura (DFW) reported data from 11/26 through 12/1. No listed species were salvaged at either CVP or SWP. The preliminary report for 12/2 shows no salvage of listed species. There was no data received on white sturgeon salvage at CVP.

Eighteen *O. mykiss* have moved upstream past the weir on the Stanislaus River since 10/1; 11 were >16 inches; three were ad-clipped.

**Operations (12/3/13)**

| SWP | | CVP | |
|---|---|---|---|
| **Exports (cfs)** | | | |
| Clifton Court Forebay | 1,500 (will decrease to 1,200 on 12/4) | Jones Pumping Plant | 1,000 |
| **Reservoir Releases (cfs)** | | | |
| Feather - Oroville | 1,250 | American - Nimbus | 1,300 (will hold at that level through December) |
| | | Sacramento - Keswick | 3,750 |
| | | Stanislaus - Goodwin | 200 (at minimum flows) |
| **Reservoir Storage (in TAF, % of capacity)** | | | |
| San Luis (SWP) | 236 (~22) | San Luis (CVP) | 285 (30) |
| Oroville | 1,382 (39) | Shasta | 1,694 (37) |
| New Melones | 1,038 (43) | Folsom | 233 (24) |
| **Delta Operations** | | | |
| DCC | Closed (on 12/1) | Sacramento River at Freeport (cfs) | 7,995 |
| Outflow Index (cfs) | ~4,800 | San Joaquin River (cfs) at Vernalis | 1,113 |
| Total Delta Inflow (cfs) | 9,564 | OMR (daily) (cfs) | |
| Water Temperature (°F) | | OMR 5-day avg (cfs) | |
| X2 (km) | >81 | OMR 14-day avg (cfs) | |
| E/I (%) | 25.4 (3-d avg) | | |

**Water Quality:** Salinity is slightly higher from the spring tides coming into the Delta this week. Delta outflow is still controlling project operations. Water quality (WQ) is acceptable at this time, although the real-time salinity levels are being closely monitored. Stuart (NMFS) asked the operators if they had made any progress on modeling the WQ conditions that would immediately precede an exceedance of the D-1641 criteria and what a "buffer" would look like to accommodate a change in DCC gate operations before an exceedance of the criteria. No progress had been made on defining a buffer for DCC gate operations. The operators indicated that the best tool that can be used now is real-time monitoring. Even if WQ modeling could be done, it cannot capture the weather effects present in the system that could quickly alter conditions. We are coming into a spring tide condition this week, so tides are pushing farther inland, and with the weak weather system passing through, it might enhance the effects of the spring tide because of the lower barometric pressure associated with the front. A low-pressure system lets the tide lift higher. Likewise, higher winds associated with the storm front can push water inland from the ocean and San Francisco Bay into the Delta; however, the magnitude of those factors is not predictable.

DOSS asked whether the typical December astronomical spring tides will be a concern for being able to meet WQ criteria. The initial modeling showed that this would be manageable using exports; however, there are more effects with which the operators must contend with, such as the aforementioned factors of winds and low-pressure systems. There is currently no real WQ issue but operators will continue to monitor real-time data for indications of worsening WQ

conditions. There are WQ conditions that modeling cannot predict due to the influence of weather in the near term.

**DCC:** Under RPA Action IV.1.2, from 12/1 through 12/14, the DCC gates are closed. If migration experiments are conducted during this time, the gates may be opened according to the experimental design, with NMFS' prior approval of the study. If WQ is not met, but the Knights Landing Catch Index and Sacramento River Catch Index are <3 fish/day, the gates may be opened until WQ criteria are met. If the indices are >3 fish/day and WQ is not met, DOSS will review the monitoring data and provide a recommendation to NMFS and WOMT.

There was a request to clarify any exceptions after DCC gate closure from 12/15 through 1/31 each year. Under RPA Action IV.1.2, as of 12/15, the gates will be closed through 1/31 with a one-time exception allowed through 1/5. To meet WQ criteria in the Delta, the exception states that,

> Upon concurrence of NMFS, DCC Gates may be opened one hour after sunrise to one hour before sunset, for up to 3 days, then returned to full closure. Reclamation and DWR will also reduce Delta exports down to a health-and-safety level during the period of this action.

**RPA Actions:**

- IV.1.1: No alerts tripped in the past week.
- IV.1.2: No triggers exceeded in the past week; DCC gates closed as of 12/1.
- IV.3: No triggers exceeded in the past week.

**Winter-Run Juvenile Production Estimate (JPE):** DOSS would like to receive an update on when the winter-run JPE will be available. Stuart reported that, typically, the escapement estimate is finalized approximately the third week in December.

> Action Item: Stuart (NMFS) will inquire about the JPE timeline and report back.

**6-Year Study:** Israel (Reclamation) reported that three releases of steelhead (480 tagged per release; 48 dummy tagged for pathology and other testing) for the 6-year study are schedule for spring 2014: First release from 3/26 through 3/29; second release from 4/23 through 4/25, and third release from 5/21 through 5/24. Tagged fall-run Chinook will also be released in spring 2014; those releases will alternate with the steelhead releases in May.

2011 results from the 6-Year Study review draft: Israel is waiting to receive final operations information from Reclamation on flow data. He will send the review draft to one or two people from each agency that participates in DOSS; others who want to be included can call or send Israel an email to request a copy.

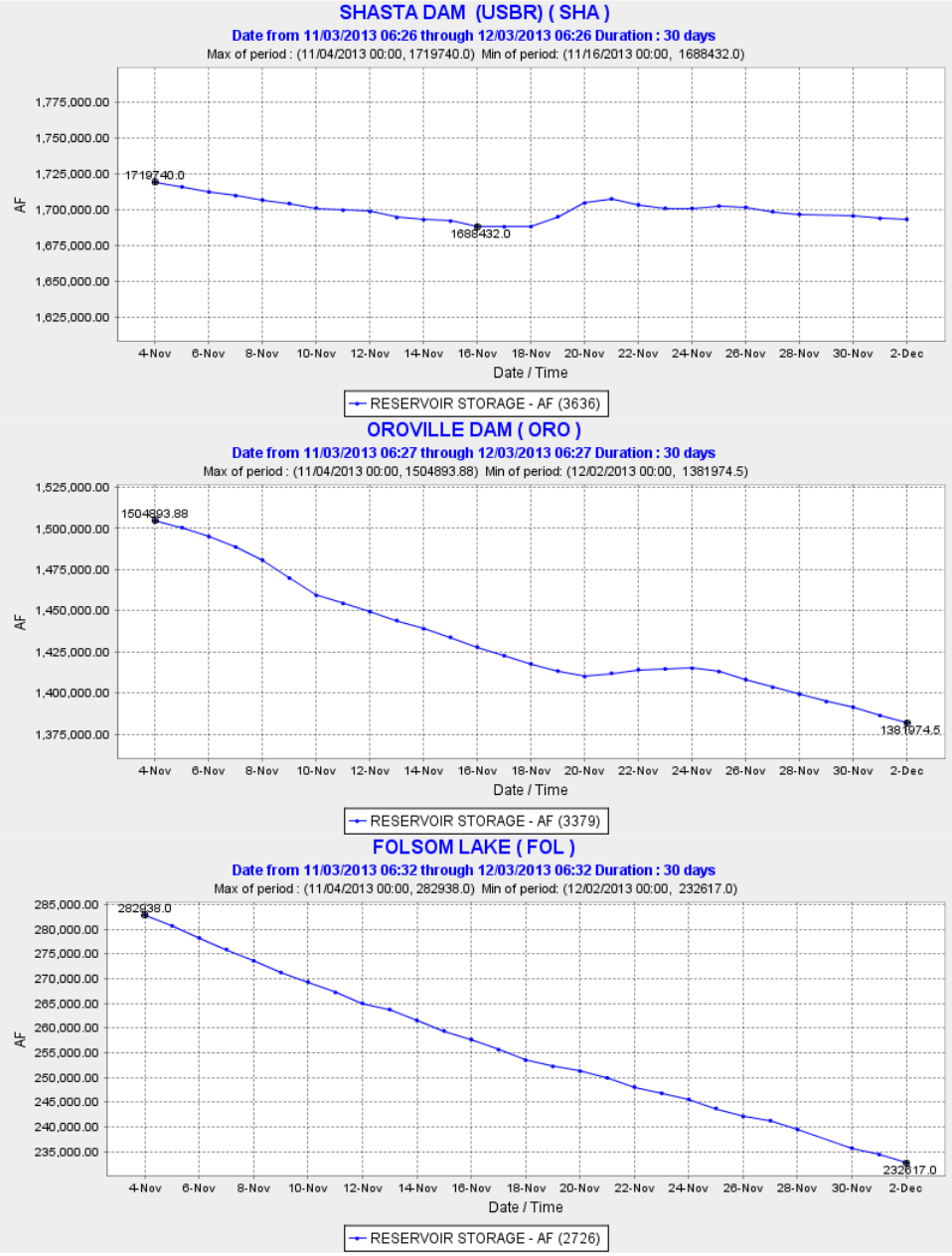
**Smelt Working Group (SWG):** Data were distributed to the SWG group but it did not meet on Monday, 12/2. Bartoo (FWS) reported that the daily average OMR flow was ~-2,000 cfs over the past few days. When conditions remain dry, SWG has typically waited to meet regularly until early January. The Fall Midwater Trawl results are available for September and October surveys, while November and December results are anticipated by late December. DFW will begin the Spring Kodiak Trawl the week of 1/13/14 and continue for one week each month

through May. The Smelt Larval Survey will begin the week of 1/6/14 and will continue for one week twice a month until late March. Previous SWG meeting notes are available at: http://www.fws.gov/sfbaydelta/cvp-swp/smelt_working_group.cfm.

**DOSS Advice to WOMT and NMFS:** None.

**Next Meeting:** The next DOSS conference call will be on 12/10 at 9:00 a.m.

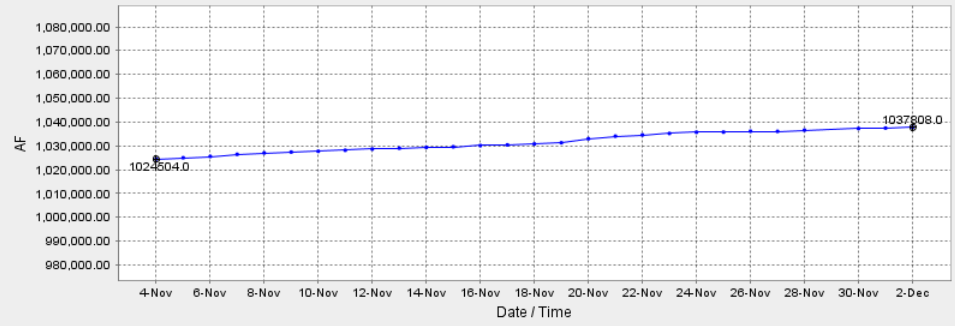
Below are graphs provided by NMFS for reservoir storage and flows, and by DWR for Chinook salmon and steelhead observed at monitoring locations in the Sacramento and San Joaquin rivers and Delta. For additional graphs, please visit the DWR website at: http://www.water.ca.gov/swp/operationscontrol/calfed/calfedmonitoring.cfm.



## NEW MELONES RESERVOIR ( NML )

**Date from 11/03/2013 06:33 through 12/03/2013 06:33 Duration : 30 days**

Max of period : (12/02/2013 00:00, 1037808.0) Min of period: (11/04/2013 00:00, 1024504.0)

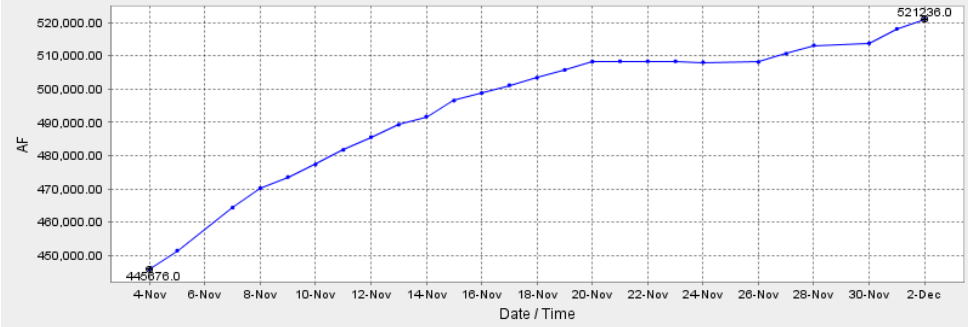



RESERVOIR STORAGE - AF (3289)

## SAN LUIS RESERVOIR ( SNL )

**Date from 11/03/2013 06:35 through 12/03/2013 06:35 Duration : 30 days**

Max of period : (12/02/2013 00:00, 521236.0) Min of period: (11/04/2013 00:00, 445676.0)

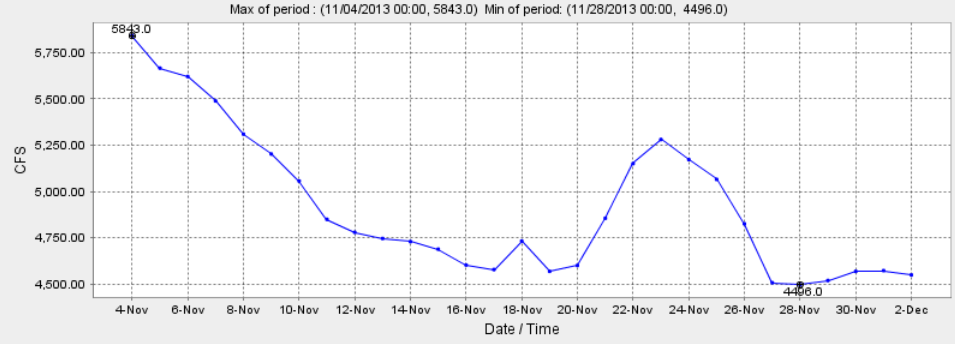



RESERVOIR STORAGE - AF (3778)

## SACRAMENTO RIVER BELOW WILKINS SLOUGH ( WLK )

**Date from 11/03/2013 06:37 through 12/03/2013 06:37 Duration : 30 days**

Max of period : (11/04/2013 00:00, 5843.0) Min of period: (11/28/2013 00:00, 4496.0)

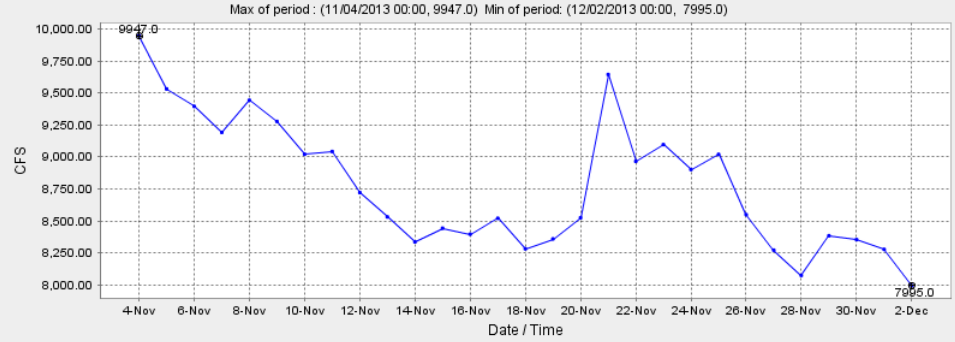



FLOW, MEAN DAILY - CFS (6284)

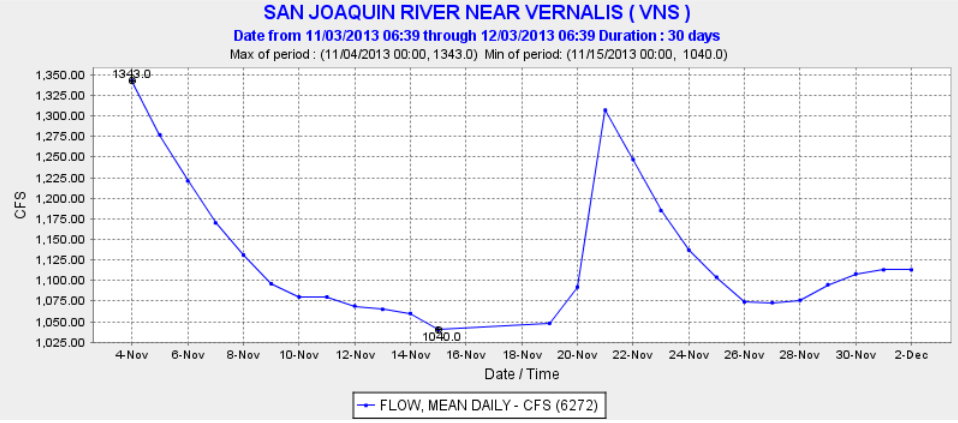
## SACRAMENTO RIVER AT FREEPORT ( FPT )

**Date from 11/03/2013 06:38 through 12/03/2013 06:38 Duration : 30 days**

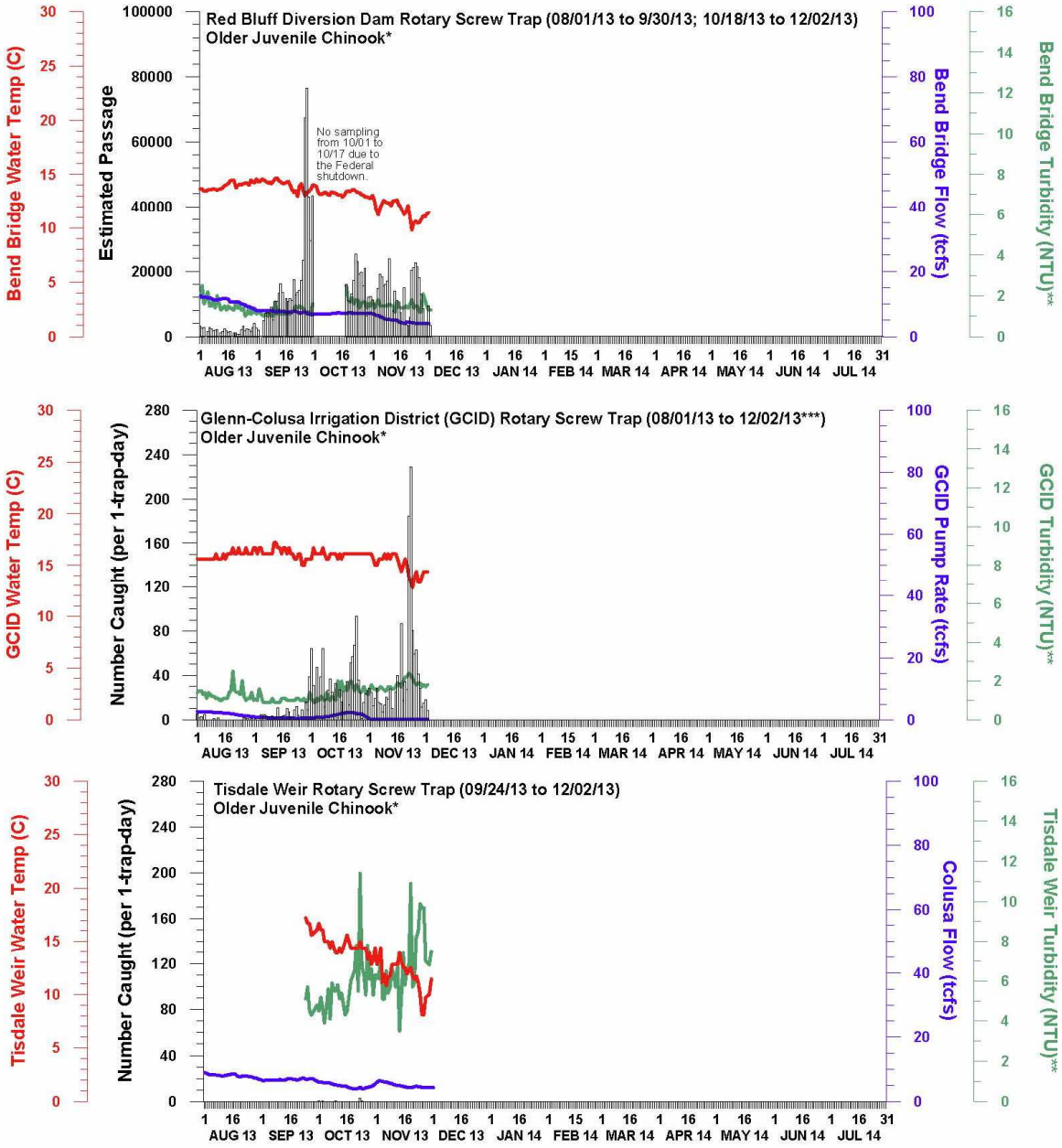
Max of period : (11/04/2013 00:00, 9947.0) Min of period: (12/02/2013 00:00, 7995.0)




FLOW, RIVER DISCHARGE - CFS (2736)

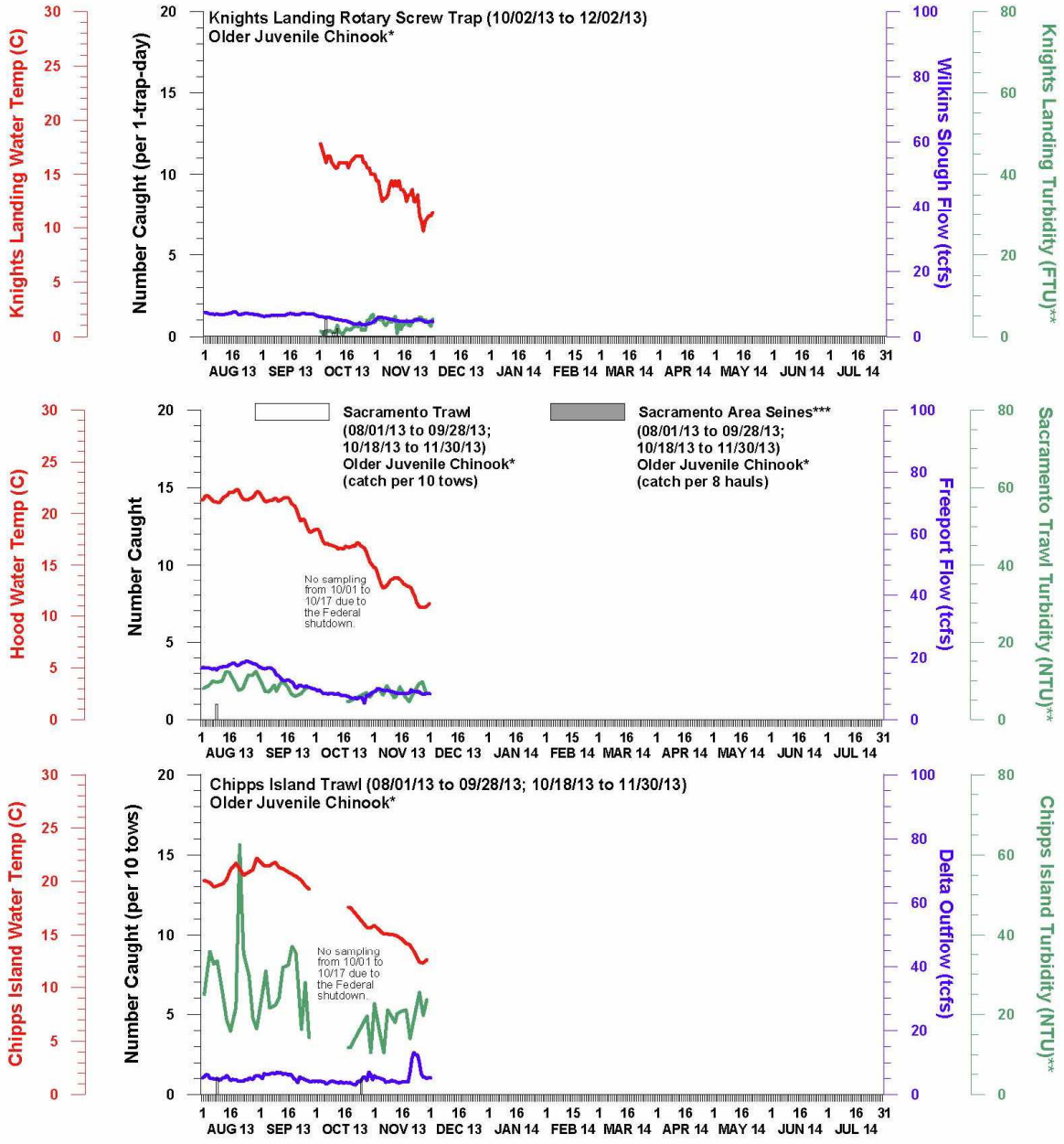

SAN JOAQUIN RIVER NEAR VERNALIS ( VNS )
Date from 11/03/2013 06:39 through 12/03/2013 06:39 Duration : 30 days
Max of period : (11/04/2013 00:00, 1343.0) Min of period: (11/15/2013 00:00, 1040.0)
CFS
1,350.00
1,325.00
1,300.00
1,275.00
1,250.00
1,225.00
1,200.00
1,175.00
1,150.00
1,125.00
1,100.00
1,075.00
1,050.00
1,025.00
1343.0
1040.0
4-Nov
6-Nov
8-Nov
10-Nov
12-Nov
14-Nov
16-Nov
18-Nov
20-Nov
22-Nov
24-Nov
26-Nov
28-Nov
30-Nov
2-Dec
Date / Time
FLOW, MEAN DAILY - CFS (6272)

# NUMBER OF UNMARKED OLDER JUVENILE CHINOOK MEASURED IN THE SACRAMENTO RIVER



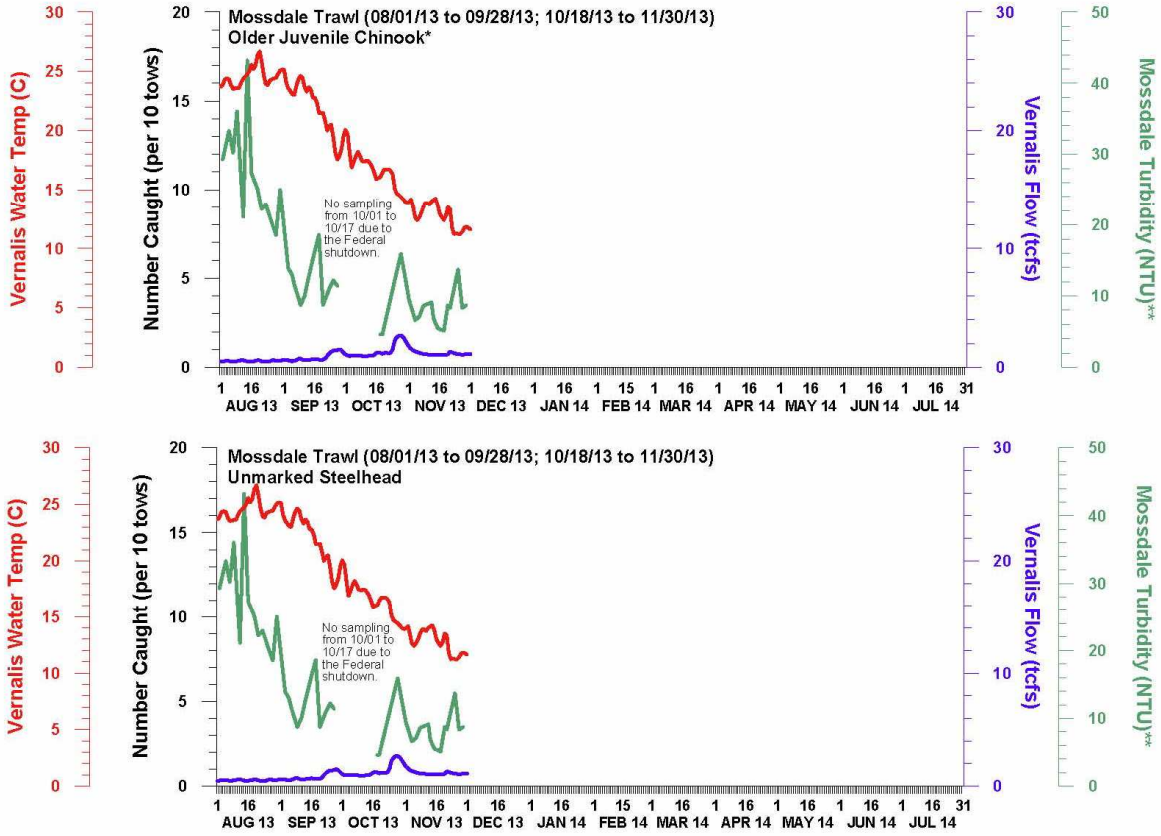

DWR-DES 02 DEC 2013
Preliminary data from DFW, FWS, GCID, and CDEC; subject to revision.
*Older juvenile Chinook defined as all Chinook greater than or equal to the minimum winter run length-at-date criteria and less than the maximum size included in the length-at-date criteria (Frank Fisher model) for which a race is assigned on a given sampling date.
**Turbidity is a discrete measurement and is not measured continuously. Therefore, data are interpolated on days when turbidity was not measured.
***GCID: Five older juveniles caught on 9/25, 9 older juveniles caught on 9/27, 57 older juveniles caught on 10/5 and 23 older juveniles caught on 11/14. However, catch could not be standardized to 1-trap day since hours fished could not be calculated due to problems with the revolution counter. As a result, data are not presented on the graph.

# NUMBER OF UNMARKED OLDER JUVENILE CHINOOK MEASURED IN THE LOWER SACRAMENTO RIVER AND CHIPPS ISLAND



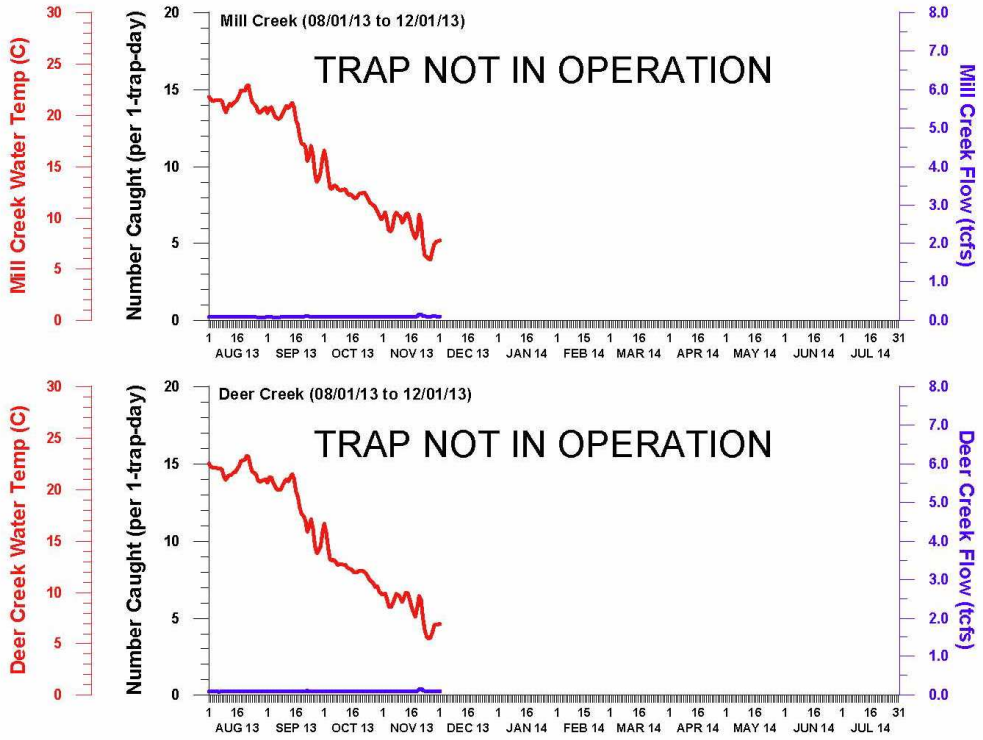

DWR-DES 02 DEC 2013
Preliminary data from DFW, FWS, and CDEC; subject to revision.
*Older Juvenile Chinook defined as all Chinook greater than or equal to the minimum winter run length-at-date criteria and less than the maximum size included in the length-at-date criteria (Frank Fisher Model) for which a race is assigned on a given sampling date.
**Turbidity is a discrete measurement and is not measured continuously. Therefore, data are interpolated on days when turbidity was not measured. Knights Landing turbidity measured in FTU, which should be roughly equivalent to NTU.
***Sacramento area seine route consists of the following seine sites: Verona, Elkhorn, Sand Cove, Discovery Park, American River, Miller Park, Sherwood Harbor, and Garcia Bend. Bars are stacked if Chinook caught from the trawl and seines are from the same day.

# NUMBER OF UNMARKED OLDER JUVENILE CHINOOK AND STEELHEAD MEASURED IN THE SAN JOAQUIN RIVER




DWR-DES 02 DEC 2013
Preliminary data from FWS and CDEC; subject to revision.
*Older juvenile Chinook defined as all Chinook greater than or equal to the minimum winter run length-at-date criteria and less than the maximum size included in the length-at-date criteria (Frank Fisher model) for which a race is assigned on a given sampling date.
**Turbidity is a discrete measurement and is not measured continuously. Therefore, data are interpolated on days when turbidity was not measured.

# WATER TEMPERATURE AND FLOW MEASURED AT MILL AND DEER CREEK




DWR-DES 02 DEC 2013
Preliminary data from CDEC; subject to revision.